



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,243	04/23/2004	Hideaki Takahashi	SIMTEK6895	3242
25776 7590 04/20/2007 ERNEST A. BEUTLER, ATTORNEY AT LAW 10 RUE MARSEILLE NEWPORT BEACH, CA 92660			EXAMINER MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/709,243

Applicant(s)

TAKAHASHI ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments made in the appeal brief filed 22 February 2007 with respect to the rejection of claims 1-14 under Michaels and Laurie have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further search and consideration, a new ground(s) of rejection is made in view of new references.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ames (US 3,495,109). Ames teaches an armature (stator) construction for a rotating electrical machine comprised of a core (stack) 24 consisting of a plurality of laminated plates (c.2:65-67; Fig.1) having a circular member (outer annular portion) 25 from which a plurality of pole teeth 26 radially extend (Figs.1&2; c.2:67-70), a pair of insulators (end forms) 31 & 32 positioned on opposite axial sides of said core 24 (c.3:12-20 & c.4:27-36) and having cooperating tooth engaging portions (ribs/intermediate portions) 37/38 encircling said pole teeth (intermediate portion 38 is convex and "encircles" pole tooth; Figs.4&7; c.3:23) and receiving coil windings 33 there around (c.3:21-36; Figs.5-6), a wiring base (printed circuit board [PCB]) 42 positioned on one axial side

Art Unit: 2834

of one of said insulators (i.e., insulator 31; Fig.1), said wiring base/PCB 42 being made from an insulating material (inherent to PCB) and receiving and retaining the wire ends 45 of the coil windings 33 (i.e., by soldering each end 45 in apertures 44 of wiring base/PCB 42; c.3:68-75; Fig.3), and interconnecting members (hooks 47 and edge of 42) formed on said one insulator and said wiring base/PCB (Figs.3&4; c.4:7-14) for connecting said wiring base/PCB 42 in a predetermined axial, radial and circumferential position (the interconnecting members fix the position of wiring base/PCB 42 relative to all three positions; c.4:7-14).

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (JP 2000-41371) in view of Yamaguchi et al. (JP 05-308742). Yamada teaches an armature (stator) construction for a rotating electrical machine comprised of a core 15 consisting of a plurality of laminated plates (Figs.1&5) having a circular member from which a plurality of pole teeth 15b radially extend (Figs.1&3), a pair of insulators 17 positioned on opposite axial sides of said core 15 (Figs.1&5) and having cooperating tooth engaging portions 31 encircling said pole teeth (Fig.1) and receiving coil windings 16 there around (Fig.4), a wiring base (printed wiring board) 32 positioned on one axial side of one of said insulators (Fig.1), said wiring base 32 being made from an insulating material (inherent), and interconnecting members 28a and 33a formed on said one insulator 17 and said wiring base 32 (Fig.1; see machine translation [0022]& [0025]) for connecting said wiring base 32 in a predetermined axial, radial and circumferential position

Art Unit: 2834

(the interconnecting members 28a/33a inherently fix the position of wiring base 32 relative to all three positions).

Yamada differs in that the wiring base 32 does not “receiv[e] and [retain]” ends of the coil windings.

Yamaguchi teaches a connecting method for windings of a stator wherein lead wires 22 from ends of stator winding 2 around each pole 11 are connected through holes 42 to a conductive pattern on an insulating board 3 (abstract). This provides a stator having a reduced number of parts without increasing core reluctance (abstract).

It would have been obvious to modify Yamada and provide a wiring base per Yamaguchi which receives and retains ends of the coil windings to reduce the number of parts without increasing core reluctance.

Regarding claims 2 and 4, as seen in Fig.1 of Yamada, the interconnecting members comprise a pair of interconnecting elements 28/28a and 33/33a, one on each of the one insulator 17 and the wiring base 32.

Regarding claim 3, as seen in Fig.1 of Yamada, the interconnecting members 28/28a and 33/33a are circumferentially spaced.

Regarding claim 5, as seen in Fig.1 of Yamada, the interconnecting elements 28/28a and 33/33a are engageable upon relative axial movement of the wiring base 32 and the insulator 17 in one direction and once engaged prevent relative movement in a direction opposite the one direction (i.e., the base 32 engages the elements 28/28a axially in one direction, and is then prevented from further axial movement in either direction by notched structure of elements 28/28a).

Art Unit: 2834

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (JP 63-11036) in view of Kikuchi et al. (JP 10-248217). Okada teaches an armature (stator) construction for a rotating electrical machine comprised of a core 13 consisting of a plurality of laminated plates (abstract; Figs.1&4) having a circular member from which a plurality of pole teeth radially extend (Figs.1-6), a pair of insulators 14 & 15 positioned on opposite axial sides of said core 13 and having cooperating tooth engaging portions 14e/15e encircling said pole teeth and receiving coil windings 16 there around (Figs.1-4&6), a wiring base 17 positioned on one axial side of one of said insulators (i.e., insulator 14; Fig.1), said wiring base 17 being made from an insulating material, and interconnecting members 14a & 17b formed on said one insulator 14 and said wiring base 17 (Figs.2,4&5) for connecting said wiring base in a predetermined axial, radial and circumferential position (the interconnecting members 14a/14c inherently fix the position of plate 17 relative to all three positions).

Okada differs in that the wire wiring base 17 does not “receiv[e] and [retain]” ends of the coil windings 16.

Kikuchi teaches a stator construction including a core 2, insulator 4, coils 3 and wiring base/printed board 5 (Fig.1). The wiring base/board 5 receives and retains ends 3a of each coil by means of a nozzle and projection 4a (Figs.1-2). This provides easy connection of the terminals of the coils to the wiring base/board (abstract).

It would have been obvious to modify Okada and provide a wiring base per Kikuchi for receiving and retaining ends of the coil windings since this would have provided easy connection of the terminals to the wiring base.



Regarding claims 2 and 4, as seen in Figs.1&2 of Okada, the interconnecting members comprise a pair of interconnecting elements, one on each of the one insulator 14 and the wiring base 17.

Regarding claim 3, as seen in Fig.2 of Okada, the interconnecting members are circumferentially spaced.

Regarding claim 5, as seen in Figs.1-3 of Okada, the interconnecting elements are engageable upon relative axial movement of the wiring base 17 and the insulator 14 in one direction and once engaged prevent relative movement in a direction opposite the one direction (i.e., the base 17 engages the elements 14a axially in one direction, and is then prevented from further axial movement in either direction by notched structure of elements 14a).

Regarding claim 6, as seen in Fig.4 of Okada, the interconnecting elements 14a may be considered to comprise a “barbed hook” and a “receiver” therefore, i.e. a notched section receives the plate 17.

Regarding claim 7, there are a plurality of circumferentially spaced interconnecting members 14a and 17b in Okada.

***Allowable Subject Matter***

7. Claims 8-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claim 8, the prior art does not teach that “there is further provided on the wiring base and the insulator a cooperating cylindrical flange and circumferentially spaced interengaging shoulders for assisting in the radial positioning.”

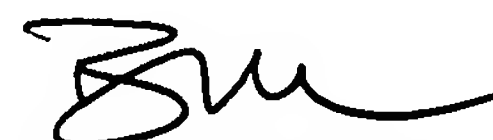
*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029.

The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
11 April 2007